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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/409,644

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NATHAN S. LEWIS

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EXAMINER

SODERQUIST, ARLEN

ART UNIT

PAPER NUMBER

1777

MAIL DATE

DELIVERY MODE

07/26/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Advisory Action  
Before the Filing of an Appeal Brief**

Application No.

09/409,644

Applicant(s)

LEWIS ET AL.

Examiner

ARLEN SODERQUIST

Art Unit

1777

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 12 July 2011 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires \_\_\_\_\_ months from the mailing date of the final rejection.  
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**NOTICE OF APPEAL**

2. ☒ The Notice of Appeal was filed on 12 July 2011. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

**AMENDMENTS**

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
(a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☒ They raise the issue of new matter (see NOTE below);  
(c) ☒ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: See Continuation Sheet. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.  
The status of the claim(s) is (or will be) as follows:  
Claim(s) allowed: \_\_\_\_\_.  
Claim(s) objected to: \_\_\_\_\_.  
Claim(s) rejected: 98-110, 112-123 and 126-159.  
Claim(s) withdrawn from consideration: \_\_\_\_\_.

**AFFIDAVIT OR OTHER EVIDENCE**

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

**REQUEST FOR RECONSIDERATION/OTHER**

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:  
See Continuation Sheet.  
12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). \_\_\_\_\_.  
13. ☐ Other: \_\_\_\_\_.

/Arlen Soderquist/  
Primary Examiner, Art Unit 1777

Continuation of 3. NOTE: page 25, lines 8-23 characterized the composition as a "suspension or dispersion of particulate conductive material in a region of conductive organic material". In a typical liquid solid suspension/dispersion, the solid particles are surrounded and separated by the liquid in the composition. In such a dispersion/suspension, the liquid fills in between the solid. Even in the instant case the composition starts out, due to the presence of a solvent, in liquid form such that the conductive organic material and solvent fill in between the particles. When the solvent that is used is removed, the structure would be expected to be similar with the conductive organic material in the gaps between particles. While the regions separating the particles contain the organic conductive material there is no expectation that the conductive organic material forms discrete regions such that the compositionally different conductive material (particles) cause a discontinuity/gap between discrete regions of the conductive organic region. Thus up to this point examiner has treated the claims as if they were a suspension of discrete particles of the compositionally different conductive material suspended/dispersed in the conductive organic material. The instant change to the claims appears to be trying to claim the conductive organic material as a discontinuous discrete particulate material which is different from how examiner has treated the claims. Thus, the instant amendment raises issues related to new matter and things which would require both additional search and consideration. .

Continuation of 11. does NOT place the application in condition for allowance because: of the reasons of record and the following additional comments. First if there is a misunderstanding between the examiner and applicant it is due to applicant being their own lexicographer in trying to describe the structure of the combination of the two different conductive materials. As noted above and in the new matter rejection, page 25 of the instant specification characterizes the structure of the composition as a suspension or dispersion of particulate material in a region of conductive organic material. That does not create an image of alternating interpenetrating regions of the two materials unless one views the interpenetration to be limited to the conductive organic material interpenetrating between the particles of compositionally different conductive material. That is how the claims have been treated in the art rejection: particles of compositionally different material gold crystallites/carbon black separated by gaps filled with the conductive organic material (phthalocyanines or conductive polymers). However, examiner points out that it is the current office action which applicant needs to respond to not the office action mailed May 26, 2010. Relative to the language of the instant specification that was cited by examiner in the final rejection and emphasized by applicant. There is a distinct difference between that language in the instant specification and the language of the instant claims. The difference is found in the additional "transverse to the electrical path between the conductive leads" language of the instant specification. This language adds additional structural relationships that further define the structure transverse to the electrical path between the two conductive leads of the claims. The instant claims do not have such a limitation and were treated by examiner as defining the structure simultaneously in any and all directions. Thus the 112 first paragraph rejection is still proper with respect to the claims.

Relative to the art rejection and applicant's pointing to the caption of figure 5 of the Haugen reference, it is noted that the structure shown in the figure is consistent with the semiconductor (phthalocyanine) being deposited on top/over the discontinuous/porous gold layer as taught in the first paragraph of page 30A. In this instance, it would be expected that at least some of the phthalocyanine would deposit into the gaps between the gold crystallites and create the claimed alternating structure. Thus the Haugen reference is anticipatory of the organic conductor and the compositionally different conductor having an alternating structure with gaps between the compositionally different conductor being in the range disclosed in the instant specification. This is further confirmed by the teaching in that same paragraph that the current can travel between the electrodes by quantum tunneling across the narrow gaps between gold crystallites. Since the voltages (1-2V) taught in this paragraph are significantly different from the high voltages taught in the last full paragraph of page 27A for the semiconductive layer without the presence of gold crystallites, this is clear evidence that the electrical path includes quantum tunneling across the gaps between the crystallites. In this case the change in conductivity, in the presence of an analyte, will depend on what happens in the space between the crystallites. In other words, if the phthalocyanine were not in the gaps between the crystallites, one would not expect there to be any change and there would be no basis for the data shown in figure 6. Thus the Haugen reference meets the "plurality of alternating regions of differing compositions and therefore differing conductivity transverse to the electrical path between the conductive leads" language of the instant specification and anticipates the structure as it was treated by examiner. If applicant wants to provide probative evidence that the structure is different rather than argue the language used by Haugen, it will be considered. Since Haugen does in fact anticipate the claimed structure, there is no need for the secondary references to teach the alternating/interpenetrating structure. The remaining arguments relative to the secondary references have been previously presented and the previous response is deemed to still apply.